

## **AMENDMENTS TO THE CLAIMS**

### WHAT IS CLAIMED IS:

1. (Original) An optical transmitter comprising:
  - a differential encoder having first and second outputs, the first and second outputs being of opposite polarity to one another,
  - a first RZ converter connected to the first output of the differential encoder and a second RZ converter connected to the second output of the differential encoder; and
  - a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled, wherein the output of the first RZ converter is connected to a first electrode of the Mach Zehnder modulator and the output of the second RZ converter is connected to a second electrode of the Mach Zehnder modulator.
2. (Original) A transmitter according to claim 1, further including inverting RZ drivers to convert RZ signals output from the RZ converters to inverted RZ signals.
3. (Currently Amended) A transmitter according to claim 1 ~~claim 1 or 2~~, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.

4. (Original) A method of encoding data as a differential phase shift keyed RZ optical signal comprising the steps of:

differentially encoding the data to produce two data streams of opposite polarity;

converting each data stream to RZ signal format; and

driving a first electrode of a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled with a first of the two data streams and driving a second electrode of the dual electrode Mach Zehnder modulator with a second of the two data streams.

5. (Original) A method according to claim 4, wherein the RZ data streams are inverted RZ data streams.

6. (New) A transmitter according to claim 2, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.